

REMARKS

Claims 1-7, 9, and 14-25 are pending. No amendment is made herein.

Claims 1-7, 9 and 14-25 are rejected under 35 U.S.C. 103(a) as being unpatented over Waki et al., U.S. Patent No. 7,008,994 (hereinafter "Waki") in view of Sano et al., EP 1 153 992 A1 (hereinafter "Sano"). (Office Action, page 4)

The rejection is premised on combining Waki with Sano to show replacing an organic amine with another base such as alkali metal hydroxide. However, as will be shown below, it is not chemically feasible to replace the organic amine in Waki et al. with the alkali metal hydroxide in Sano. For at least this reason, the rejection fails.

On p. 5 of the Office Action, text lines 6-15, the rejection states:

Regarding the claimed alkali metal hydroxide, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified the method taught by Waki et al. by replacing the organic amine with another base such as alkali metal hydroxide for neutralizing the carboxylic acid groups of the resin since organic amine and alkali metal hydroxide are functionally equivalent and can be used interchangeably for the purpose of neutralizing carboxylic acid groups. Such replacement would not be expected to result in a critical impact to the dispersion.

The rejection only notes that alkali metal hydroxide neutralizes the carboxylic acid group of the resin, which is disclosed in Sano.

On the other hand, a cross-linking reaction is essential in Waki et al. In order to carry out the cross-linking, Waki et al. uses an organic amine. This is clear from the description of Waki et al., col. 8, lines 11 to 21 (emphasis added):

In general, examples of a curing process of a carboxylic group-containing thermoplastic resin which is used for coating material or printing ink are a process in which moisture solvent and organic amines scatter under the condition of heating, and functional groups start curing reaction at the same time; and a process in which moisture, solvents and organic amines scatter under the conditions of heating, and polymerization curing occurs based on radical source such as organic amines at the same time. In both processes, cross-linking proceeds at three-dimension, so that strong film is formed.

In other words, since the organic amine scatters under heated conditions, or becomes a radical source, the organic amine becomes a source for cross-linking reactions. Due to this, the organic amine is essential in Waki et al. in which cross-linking is essential. Therefore, it not chemically feasible to replace the organic amine in Waki et al. with the alkali metal hydroxide in Sano and achieve the same chemically desired result.

In summary, when a person skilled in the art recognizes that the alkali metal hydroxide is used as a polymerization source in a process for obtaining an ink composition, it becomes impossible to use any alkali metal hydroxide in Sano in the process of Waki et al. Because of this, logically Waki et al. nor Sano can teach replacing the organic amine with another base such as alkali metal hydroxide. Thus the rejection fails for lack of a *prima facie* conclusion of obviousness.

In addition to the polymerization activity necessary in Waki et al., Sano uses "phase inversion method" or "salting-out method" as a method for producing an ink composition ([0045]-[0051], and Examples). In contrast, the methods used in Waki et al. do not use emulsion or precipitation of a resin. Therefore, the method used in Sano is completely different from the method used in Waki et al. and from the claimed invention. Therefore, it is not logical to replace the organic amine in Waki et al. with the alkali metal hydroxide in Sano, because the components have different roles in their respective different methods.

In addition to the chemical non-feasibility of Sano as a teaching reference, the combination of Waki et al. and Sano is not at all obvious. In the claimed invention, the components (1)-(4) should be kneaded to dissolve the resin (1) in the basic compound (3) and humectant (4) and the solid content percentage of the colored kneaded product should be from 50 to 80% by mass in Claim 1. Due to these process steps, it is possible to maintain the viscosity of the colored kneaded product upon being kneaded to be suitably high, and increasing the shearing force applied to the colored kneaded product from a kneading apparatus during kneading, both crushing of the pigment in the colored kneaded product and coating of the pigment with the resin can be simultaneously achieved (the present specification, page 20, last paragraph). That is, the solid content percentage of the colored kneaded product should be in the specific range as claimed.

However, Waki et al. does not prescribe the solid content in the kneading step, unlike the claimed invention. Among other differences, the claimed invention and Waki et al. are largely different in the solid content of the colored kneaded product. The present invention has unique

features which are not disclosed in Waki et al. and Sano. Further, the present invention has unique effects which are not obtained by the combination Waki et al. and Sano, assuming *arguendo* they are combinable.

In light of the showing that Sano is not a teaching reference for Waki et al. nor combinable with Waki et al. to teach the claimed invention, the rejection fails to create a *prima facie* conclusion of obviousness. It is respectfully requested that the rejection be reconsidered and withdrawn.

In view of the above, each of the claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105.

Dated: April 14, 2011

Respectfully submitted,

Customer No. 21874

Electronic signature: /James E. Armstrong, IV/
James E. Armstrong, IV
Registration No.: 42,266
EDWARDS ANGELL PALMER & DODGE
LLP
P.O. Box 55874
Boston, Massachusetts 02205
(202) 478-7375
Attorneys/Agents For Applicant